Service Area Plan

Department of Health

Radiological Health and Safety Regulation (56504)

Service Area Background Information

Service Area Description

This service area implements and enforces radiation protection regulations and provides public education. Regulation of ionizing radiation sources assures that the public is protected from unnecessary and excessive radiation exposure. Products and services include:

- Radioactive material licensure for naturally occurring or accelerator produced isotopes, inspection of licensees and enforcement of regulations;
- X-ray machine registration, inspection and certification and enforcement of regulations;
- Educational and technical assistance relating to indoor radon, and enforcement of regulations;
- Training and response for radiological emergencies;
- Environmental monitoring in the vicinity of nuclear facilities; and
- Issuance of U.S. Department of Transportation exemptions for radioactive contaminated shipments of scrap metal and refuse.

Service Area Alignment to Mission

This service area directly aligns with VDH's mission of promoting and protecting the health of Virginians by eliminating unnecessary exposure to ionizing radiation.

Service Area Statutory Authority

Chapter 6, Article 8 of Title 32.1 of the Code of Virginia provides the authority and requirement for promulgation and enforcement of radiation protection regulations, licensure of radioactive materials, and registration, certification and inspection of X-ray machines. Section 32.1-229 A.4 authorizes the Board of Health to adopt regulations providing for (i) licenses to use, manufacture, produce, transfer, receive, acquire, own or possess quantities of, or devices or equipment utilizing, by-product, source, special nuclear materials, or other radioactive material occurring naturally or produced artificially, (ii) registration of the possession of a source of radiation and of information with respect thereto, and (iii) regulation of by-product, source and special nuclear material. Section 32.1-229 B requires registration, inspection and certification for all diagnostic and therapeutic X-ray machines used in the healing arts.

Service Area Plan

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Service Area Customer Base

Customer(s)	Served	Potential
Citizens	2,500	7,400,000
Federal agencies	10	12
Health districts	35	35
Landfills	330	350
Legislators, federal	13	13
Legislators, state	140	140
Local governments	135	135
Local health departments	119	119
Medical and dental facilities	6,038	6,500
Nuclear power plants	2	2
Number of X-ray facilities	6,269	6,580
Occupational workers	13,200	13,500
Physicians	18,789	21,000
Radioactive material licensees	243	400
Radon inspectors and mitigators	487	600
State agencies	5	7

Anticipated Changes In Service Area Customer Base

• The U.S. Environmental Protection Agency is expected to promulgate a new standard for radon in drinking water. This would potentially increase the number of radon testers and mitigation contractors

• Anticipated growth in the number of new facilities offering X-ray services is estimated to be between three and five percent

• Efforts are being made for Virginia to enter into an agreement with the U.S. Nuclear Regulatory Commission (NRC) for the regulation of byproduct material, source material and special nuclear material. Virginia has 240 licenses for naturally occurring and accelerator produced material. Under the agreement state program, Virginia would assume regulatory responsibility for 350 licenses now held by the NRC.

• The U.S. Naval Nuclear Propulsion Program has requested VDH participation in exercises conducted at the naval shipyards in Virginia. Previously, VDH was not asked to participate in these exercises

Service Area Products and Services

- U.S. Department of Transportation Exemptions
  • Issue transportation exemptions for shipments of scrap metal or refuse received at facilities that detect radioactive contamination
- Inspection and enforcement
  • Perform compliance inspections of radioactive material licensees and enforce license conditions and regulations for the safe use and handling of radioactive materials
  • Ensure that radon professionals satisfy state requirements for performing testing and mitigation. Pursue enforcement action for those that are not in compliance with regulations
  • Perform inspections on analytical and medical X-ray equipment. Conduct violation follow-ups verifying repairs on equipment and performance have been made
  • Perform investigations on equipment when citizens lodge complaints against facilities concerning equipment performance
  • Verify equipment performance and issue certification on equipment inspected by private inspectors
  • Review credentials of individuals and issue certificates to those who wish to be listed as private inspectors
  • Perform inspections at mammography facilities for the Food and Drug Administration (FDA)
  • Provide report of mammography facilities inspections to FDA
  • Provide electronic copies of X-ray database to interested parties
  • Collect fees for the registration and inspection of X-ray equipment
- Radon Information
  • Operate toll free radon hotline to support customers' requests for information and guidance
  • Disseminate published information regarding radon, its health effects, testing, and mitigation to citizens
- Radiological Emergency Preparedness and Response
  • Maintain and operate two mobile radiation laboratories to provide radiation monitoring support
  • Participate in drills and exercises at nuclear facilities
  • Develop plans, procedures and training activities to adequately respond to a nuclear incident
  • Maintain radiation-monitoring equipment for localities within 10 miles of the two nuclear power facilities
- Licensure, Registration and Certification
  • Issue licenses for radioactive material
  • Register and certify X-ray producing devices
  • Review periodic inspection reports of those devices to assure compliance with the Radiation Protection Regulations
  • Issue certification to those individuals qualified to be listed as private inspectors

Factors Impacting Service Area Products and Services

• Increased media coverage of radiation exposure would increase the number of inquiries from the citizens
• If Virginia becomes an Agreement State with NRC, it would require managing an additional 350 radioactive material licenses. Agreement state status would require Virginia to assume regulatory responsibilities for 350 licenses now regulated by NRC for byproduct material, source material and special material and would also require additional staffing (5-6 FTEs).
• Change in number of private inspectors performing inspections of X-ray machines
• An increase in number of facilities using radioactive materials or X-ray machines would increase the workload of the staff
• An increase in number of health care professionals using X-ray machines would increase the registration, licensure, and certification activities
• Increase in education and training for occupational workers would reduce inquiries from workers regarding exposure to radiation
• Increase in international and interstate commerce would increase the number of potential transportation accidents and would require increased number of emergency responses
• As the concerns and response plans for acts of terrorism increase, the workload of the service area would increase

Anticipated Changes To Service Area Products and Services

• Requests from localities for maintenance and calibration of radiation monitors are expected to increase as more localities are acquiring these monitors
• Increase in use of portable and mobile X-ray devices to view contents of unknown packages by law enforcement officials and emergency responders

Service Area Financial Summary

The chief source of funding for Radiological Health and Safety Regulation is general funds. Nongeneral funds are from a contract with the US Food and Drug Administration, a grant from the US Environmental Protection Agency (EPA), and special funds from the Federal Emergency Management Agency. The grant from EPA for indoor radon requires matching state funds to supplement state activities.

	Fiscal Year 2007		Fiscal Year 2008	
	General Fund	Nongeneral Fund	General Fund	Nongeneral Fund
Base Budget	$738,459	$401,946	$738,459	$401,946
Changes To Base	$77,842	$18,345	$77,842	$18,345
SERVICE AREA TOTAL	**$816,301**	**$420,291**	**$816,301**	**$420,291**

Service Area Objectives, Measures, and Strategies

Objective 56504.01

Protect the public and occupational radiation workers by maintaining effective control over licensed radioactive materials to ensure their safe handling and disposal.

Protection of workers and the public from the use of radioactive materials is of critical importance to ensure the safety of Virginians from sources of radiation. Personal injury may occur due to improper actions by radiation workers. Misplaced or improperly secured radioactive materials may present a hazard to the public or may be used by a terrorist for making a radiological dispersal device, also known as a 'dirty bomb'.

This Objective Supports the Following Agency Goals:

- Prevent and control exposure to toxic substances and radiation.

  (This objective is also aligned with Virginia's Long Term Objective to "Inspire and support Virginians towards healthy lives and strong and resilient families.")

This Objective Has The Following Measure(s):

- **Measure 56504.01.01**

  Percent of violations corrected in a timely manner.

  Measure Type: Outcome **Measure Frequency:** Annually

  Measure Baseline: Licensees corrected 100% of safety violations by their corrective action due date during FY04.

  Measure Target: Maintain 100% correction rate by corrective action due date during FY07.

  Measure Source and Calculation:

  Data are collected from reports of violations submitted by VDH inspectors throughout the year. The percent of violations corrected is calculated as the total number of violations corrected during the year divided by the number of violations issued and due for correction during the year multiplied by 100

Objective 56504.01 Has the Following Strategies:

- Collaborate with the Nuclear Regulatory Commission (NRC) to provide consistent regulation of radioactive materials.
- Update the Radiation Protection Regulations.
- Provide training to VDH staff for licensing and inspecting facilities in accordance with federal practices.
- Participate in inspections of federally licensed facilities with NRC staff.
- Implement a bonding and surety requirement for radioactive materials licenses.
- Develop an agreement with the NRC for VDH to assume regulatory responsibility for certain federally licensed facilities.
- Collaborate with the Department of Emergency Management and State Police in reporting missing or stolen radioactive materials
- Collaborate with the Department of Professional and Occupational Regulation (DPOR) with respect to lead in paint testers by requiring a license condition to include proof of DPOR licensure in order to use an X-ray Fluorescence device when that device is used to test for lead in paint.

- Investigate licensee accidents, misadministrations, over exposures and worker complaints.
- Perform at least one compliance inspection during the term of the license.
- Maintain a database of licensees that can provide inspection due dates, renewal dates and other information required for maintenance of licenses.
- Provide all forms, guidance documents and information for completing an application, or license amendment on the agency's Web site.

Objective 56504.02

Protect the public from health risks due to indoor radon.

Protection of the public from the elevated levels of indoor radon is of critical importance to ensure the safety of Virginians from sources of radiation. Continuous exposure to elevated levels of radon over time in the population increases the risk of lung cancer. Promoting the testing and mitigation of radon by providing educational materials and technical assistance to citizens contributes to the reduction of radon exposure and accompanying cancer risk. Access to educational materials and technical assistance relating to radon helps to assure that the public is protected from unnecessary and excessive radiation.

This Objective Supports the Following Agency Goals:

- Prevent and control exposure to toxic substances and radiation.

  (This objective is also aligned with Virginia's Long Term Objective to "Inspire and support Virginians towards healthy lives and strong and resilient families.")

This Objective Has The Following Measure(s):

- **Measure 56504.02.01**

  Timeliness of response to public requests for radon information.

  Measure Type: Outcome **Measure Frequency:** Annually

  Measure Baseline: The response time for each request was approximately 48 hours in 95% of the cases during FY05.

  Measure Target: Maintain a response time of 48 hours or less for at least 95% of requests during FY07.

  Measure Source and Calculation:

  Requests for information and publications for indoor radon and its mitigation are received by telephone, letters, email, and fax. Responses to these requests are typically provided within 48 hours by telephone, letters, email, or fax. Log sheets are used to record request from the public and include the date of the request and date the information or service is provided. VDH calculates the percentage by dividing the number of request provided within 48 hours by the total number of request and multiplied by 100

Objective 56504.02 Has the Following Strategies:

- VDH will continue to collaborate with the Environmental Protection Agency to provide an educational and technical assistance program for indoor radon.
- VDH will collaborate with the Virginia Department of Education to ensure schools are tested for indoor radon.
- VDH will develop coalitions which work in partnership with local governments, partner affiliates and other radon leaders to promote radon awareness.

- VDH will encourage radon testing by the following activities:
  - provide direct mailings of radon information and test kit order forms.
  - participate in public speaking engagements
  - attend appropriate conventions and seminars
- VDH will promote radon resistant features for new construction building codes for areas of the state classified by EPA as having a high potential for the occurrence of elevated levels of indoor radon.
- VDH will update its radon Web site with the latest federal guidance.
- VDH will continue to support the in-state toll-free telephone hotline for radon.
- VDH will provide information regarding karst geological structures and the effects of this geology on radon testing. Karst refers to an irregular limestone region with sinks, underground streams and caverns. In particular VDH will:
  - Provide a map on its Web site showing areas in Virginia that have karst geology.
  - Identify and list which counties, cities, and towns have karst geology.
  - Provide information on the Web site the effects of karst geology on radon testing.
  - Inform local real estate agents that homes in karst affected areas may need to be re-tested for indoor radon during different times of the year.

Objective 56504.03

Protect public health by measuring the amount of radiation and radioactivity in the environment, and taking appropriate corrective action.

Information regarding radiation levels in the environment and recognizing the significance of any changes in the radiation levels is of critical importance to ensure the safety of Virginians from sources of radiation. Iimplementation of an environmental monitoring program helps to assure that the public is protected from unnecessary and excessive radiation.

This Objective Supports the Following Agency Goals:

- Prevent and control exposure to toxic substances and radiation.

  (This objective is also aligned with Virginia's Long Term Objective to "Inspire and support Virginians towards healthy lives and strong and resilient families.")

This Objective Has The Following Measure(s):

- **Measure 56504.03.01**

  Timeliness of response to incidents involving elevated radiation levels.

  Measure Type: Outcome **Measure Frequency:** Annually

  Measure Baseline: 95 percent of the incidents were responded to within 48 hours during FY04.

  Measure Target: Maintain response time of 48 hours or less for at least 95 percent of incidents during FY07.

  Measure Source and Calculation:

  Notifications of incidents involving radiation contamination at scrap metal facilities or sanitary landfills are received by telephone. VDH conducts site visits and monitors radiation levels at the reported facilities. When appropriate, VDH issues U.S. Department of Transportation (DOT) exemptions that allow the return of scrap metal and municipal waste shipments to the point of origin. Data is documented on DOT approval forms. The percentage of responses within 48 hours is determined by dividing the number of responses within 48 hours by the total number of responses and multiplying by 100

Objective 56504.03 Has the Following Strategies:

- Adopt federal guidance document for laboratory analysis of environmental samples.
- Compare environmental sample results with the results reported by nuclear facilities.
- Iinvestigate any unusual radiation levels found, and issue U.S. DOT exemptions in cases involving shipments of scrap metal or municipal waste.
- Respond to public concerns and questions concerning environmental radiation levels.
- Review and revise environmental monitoring as required to ensure there is appropriate sampling and analysis.
- Post on the agency's Web site historical data collected over the last two decades for North Anna and Surry Nuclear Power Stations, and the BWXT Naval Fuel Fabrication Facility.
- Share environmental data with the U.S. Environmental Protection Agency (EPA).
- Assist EPA with the maintenance and operation of two ambient monitoring stations projected to be installed in Richmond and Virginia Beach. These two stations will become part of the national Environmental Radiation Ambient Monitoring System.
- Collaborate with the VDH Office of Drinking Water with respect to radionuclides in drinking water to include:
  - Provide technical assessments of radionuclides in drinking water.
  - Conduct surveys of radon levels in drinking water.
- Protect the public and occupational workers against unnecessary radiation exposure from X-ray producing machines.
- Respond to radiological emergencies
- Develop emergency preparedness plans
- Provide training
- Participate in nuclear power plant exercises